WhatsApp Messenger Application among Business Students in Malaysia – An Exploration
(Aplikasi Pemesan WhatsApp dikalangan Pelajar Jurusan Perniagaan di Malaysia – Suatu Tinjauan)

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ABSTRACT

WhatsApp Messenger, one of the social media applications on smart phone is gaining popularity as a mode of social interaction recently. Many people, particularly part-time university students,have used this application, not only for daily communication but also for discussion on their academic tasks. Therefore, high level of usage of this application is expected amongst part-time university student in Malaysia. However, little is understood from empirical viewpoint about the intensity of WhatsApp messenger usages and its impact on the academic performance of students in the university. This study seeks to investigate the perceived impact of WhatsApp messengeron the academic performance of university students in Malaysia. A survey and face-to-face interviews were carried-out which involved 86 part-time students in the survey and 15 students in the interviews. The findings indicated that WhatsApphas enhanced effective flow of information and idea sharing among students. Despite making communication easier and faster, WhatsApp has also negative impact on the performance of students. The studyrevealed that: WhatsApphas taken much of students study time and concentration because they are being bothered by the incoming messages. This resulted in procrastination due to inabilities to manage time in balancing online activities, lack of concentration during lectures and academic discussion, distracts students from completing their assignments and affecting student ability in spelling and grammatical construction of sentences on assignments. In addition, some issues on the WhatsApp application were also discussed.

Keywords: WhatsApp Messenger, impact, University Students Performance, business, Malaysia.

ABSTRAK

WhatsApp Messenger, adalah salah satu aplikasi media sosial di telefon pintar telah menjadi semakin popular sebagai satu cara interaksi sosial masakini. Ramai orang terutama pelajar separuh masa universiti telah menggunakan aplikasi ini bukan sahaja untuk komunikasi harian tetapi juga untuk perbincangan mengenai tugasan akademik mereka. Oleh itu, penggunaan yang agak ketara adalah dijangkakan dikalangan pelajar separuh masa di Malaysia. Walaupun sedemikian, masih sedikit sahaja yang boleh difahami dari kajian empirikal yang lepas mengenai penggunaan aplikasi WhatsApp dan kesannya terhadap prestasi akademik pelajar di universiti. Oleh itu, kajian ini dijalankan bagi menyiasat kesan yang dapat dilihat dari aplikasi WhatsApp ini dalam prestasi akademik pelajar universiti di Malaysia. Satu kajian soal selidik yang melibatkan 86 orang pelajar sambilan dan temubual bersama15 orang pelajar telah dijalankan. Dapatan kajian menunjukkan bahawa aplikasi WhatsApp dapat mempertingkatkan aliran maklumat dan idea yang berkesan dikalangan pelajar-pelajar yang terlibat. Walaupun komunikasidikalanganpelajarlebihmudahdanpantas,aplikasiWhatsAppjugatelahmemberkesanyangnegativepada prestasi pelajar. Kajian menunjukkan bahawa WhatsApp telah mengambil banyak masa pelajar dan mengurangkan tumpuan mereka kerana mereka sering diganggu oleh mesej yang masuk. Ini mengakibatkan penangguhan yang disebabkan oleh ketidakbolehan mengurus masa dan mengimbangi aktiviti dalam talian dengan baik, kurangnya konsentrasi semasa kuliah dan perbincangan ilmiah, mengganggu pelajar daripada menyiapkan tugasan mereka serta mempengaruhi pelajar dalam ejaan dan pembinaan tatabahasa ayat Bahasa Inggeris. Disamping itu, beberapa isu aplikasi WhatsApp juga dibincangkan.

Kata kunci: WhatsApp Messenger, kesan, prestasi pelajar universiti, perniagaan, Malaysia.

INTRODUCTION

The advancement in technology has shown a substantial growth concerned with each and every field whether it be the communication systems, astronomy, semiconductor devices, computers, bio-electronic devices or electronic devices of daily usage. It is evolving at a very fast rate, and what most people did not even think could be real a few years ago, is now becoming a reality. It has made the world change faster and wilder. Nowadays, it seems so hard to escape the presence of technology. People are becoming more and more dependent on technology. In fact, many people praise the technological gadgets that they use in their everyday lives, and many of us depend on it to get us through the day, to do our job, to get around, and to find certain things.

WhatsApp messenger is one of the changes in communication technology that is commonly used on smart phones. With the advent of instant mobile messaging applications, traditional SMS is in danger of losingitsplace as the leader of mobile messaging (Churchand Oliveira 2013). WhatsApp allows mobile users to send real-time text messages to individuals or groups of friends at no cost as long as their phone are connected to the internet. This application is also highly addictive and could create a great impact on regular users. According to Kuppuswamy and Narayan (2010), this application can leave a trace that becomes difficult to control and cure. While there is a vast body of research on traditional text messaging practices, little is understood about how and why people have adopted this instant WhatsApp messenger.

Thus, the goal of this study is to provide a deeper understanding of the motives and perceptions of WhatsAppand also to explore the impact of this application in the society, especially among university students. This paper is organized as follows: the introduction of the paper, follows by the literature review, the conceptual framework of this study, the methodology of the study, and findings and discussion of the study. Finally, the last section displays the conclusion and implications of the study.

LITERATURE REVIEW

Social Media

Social media has becoming an important element among people nowadays. Part of the reason is because through social media, people can share their daily life activities, tap markets or communities in need, which and who cannot be reached by other initiatives. Social media allows people to follow breaking news, keep up with friends or colleagues, contribute to online debates or learn from others (Kirschner and Karpinski 2010). Some experts even suggest that social media will become the Internet's new search function. They predict that people will spend less time navigating the Internet independently; instead search for information or make decisions based on "friend-casting" recommendations from their friends (ITU 2010). Hence, social media are changing users' expectations of privacy, acceptable online behaviour and etiquette. Many people, regardless whether they are student, academics, or practitioners, are now have accessed to social media applications on their smart phones, tabs, or computers.

Social media generally refers to media used to enable social interaction (ITU 2010). It can be considered as a one-to-many communication method. Although people can respond to the comment, the content has to be produced first by someone. For the purpose of this study, the term social media technology refers to web-based and mobile application that allow individuals and organisations to create, engage, and share user-generated (non-traditional media) or existing content (traditional media such as news, magazines, radio, and television) in digital environment through multi-way communication (Kaplan and Haenlein 2010; Davis *et al*. 2014). In addition to these features, social media technology also contains design elements that create virtual social space that encourages interaction, thusit broadens the appeal of the technology and promotes back and forth transitions from the platform to face-to-face engagement. Some examples of social networking sites include Facebook, Twitter, Youtube, Wikis, Skype, WhatsApp, Instagram, and Pinterest.

There are billions of people who are now engaged with social media. For example, the Infographic Social Media Stats 2013 (Inforgraphic 2014) reported there is more than 700 million users access Facebook from 7000 different devices, more than 500 million users access Twitter, and more than 130 million use Instagrams in 2013. In addition, many users spend significant hours on these social networking sites on daily basis. For instance, the report also illustrate that more than 23% of Facebook users check their account 5 times a day; there are 1,000 comments per second in the Twitter, and over 5 million pictures and videos being shared in 24 hours in Instagram (Infographic, 2014). Thus, these mediums have not only made people even busier, but they also have revolutionized the way people communicated and maintain relationships (Boyd 2007; Boyd & Ellison 2007; Nicholson 2011).

Students and Social Media

There are strong evidences in the integration between students and social media. In the United States, for example, study by Pearson Learning Solutions and Babson Survey Research Group in 2011 (Moran *et al*. 2011), revealed that nearly two-thirds of all faculties in United States have used social media during class sessions, and 30% have posted content for students to view or read outside class, over 40% of the faculties required students to read or view social media as part of a course assignment, and 20% have assigned students to comment on or post to social media sites. In the UK, more than 85% students use social media in their learning (Davis *et al*. 2014). This means that social mediais becoming a place for students to engage in education.

Studies also show that there are various perceptions of students about media. In the UK, according to an extensive study by the Office of Communications (Ofcom) of the United Kingdom, almost 50% respondents aged between 8 and 17 who use the Internet had set up their own profiles on a social media such as Facebook (Ofcom 2008a; Dowdall 2009). Among positive perceptions obtained from users of social media include effective learning which resulted from easy learning climate among students through social networking (Mazer*et al*. 2010). Keenan and Shirii, (2009), on the other hand, looked at how social media encourage friendliness through the use of Facebook, Twitter and LinkedIn. The study concluded that numerous approaches can be used to encourage sociability among students which leads to a positive effect from social media.

Whatsapp Messenger Application

The use of social media through computer and mobile devices has become quite widespread. Facebook and Twitter have been identified as the most prominent interfaces, and continue to be popular among usages. However, with the explosion of smart phones, new social media that works on smart phones has becoming more attractive. For example the WhatsApp messenger application has been the most globally popular messaging app with 600 million users as on Sept 2014 (Olsen 2014). According to the WhatsApp CEO, Jan Koum, the application is now bigger than Twitter with over 300 million active monthly users and billions of messages sent every day. Among WhatsApp's major selling points is the ease of use of its cross-platform messaging, file and media sharing, as well as the simplicity of creating user accounts (uniquely tied to your phone's SIM card), seamless transitioning between mobile and WiFi data, and contact syncing (Bouhnik & Deshen 2014).

Just like most of the social networking sites, WhatsApp messenger application allows users to create profiles to interact with each other, build and maintain connection, invite others to join a community, and share user-generated content quickly and easily with up to 50 users in the same group. A study by Bouhnik and Deshen (2014) found that most students used WhatsApp messenger for four main purposes: communicating among students; nurturing the social atmosphere; creating dialogue and encouraging sharing among student, and as a learning platform. Thus, there is a possibility to use this medium for teaching and learning.

Conceptual Framework

WhatsApp messenger application is considered an innovative advancement in communication technology (Shamare 2014). In order to find a suitable framework for this study, a list of technological diffusion literature was reviewed. Among them are Roger's (1995) diffusion of innovation theory (DOI), Davis's (1989) technology acceptance model (TAM), Tornatzky and Fleischer's (1990) technological-organisational-environmental model (TOE), and Azjen's (1991) theory of planned behaviour (TPB). Both DOI and TOE are mostly used in the study of innovation diffusion in organisation. TAM and TPB models focus mainly on user acceptance to analyse automation processes in the early phases of IT diffusion (Ordanini 2006), which is the most appropriate model for this study.

TAM model has been used by many researchers to study user acceptance and it is an extension of TPB model. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: 1) perceived usefulness - "the degree to which a person believes that using a particular system would enhance his or her job performance"; and 2) perceived ease-of-use - "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). These two variables will be considered in this study to understand students' perception on WhatsApp messenger application. Fig. 1 shows the graphical representation of the conceptual framework of the study.

FIGURE 1. Conceptual framework of the study
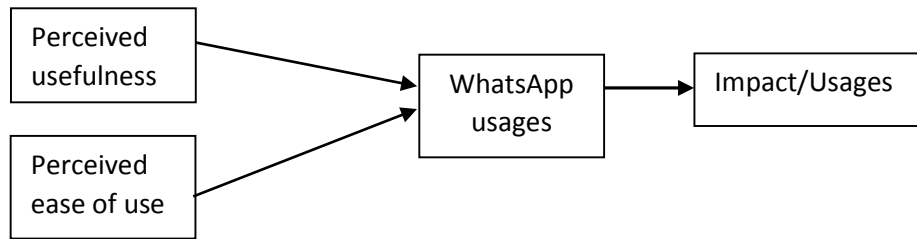
The framework in Fig. 1 is used in this study to investigate the usages andimpact of WhatsApp among university students. The research questions are:1) what are the extent WhatsApp messenger application usages among university students; 2) why students use WhatsApp; and 3) what are the impact of WhatsApp usage.

METHODOLOGY

The data for this paper is gathered through a **group administered questionnaire. A questionnaire survey** is a data gathering method that is utilised to collect, analyse and interpret the views of a group of people from a target population **(**Baškarada 2014; Gratton & Jones 2004; Leedy & Omrod 2005). Surveys have been used in various fields of research, such as sociology, marketing research, politics and psychology **(Hashim 2011;** Leedy & Omrod, 2005). One hundred part-time business students who currently registered with Faculty of Economics and Management (FEP) at University Kebangsaan Malaysia (UKM) were brought together in a classroom and asked to respond to a structured sequence of questions. The researcher only gave the questionnaire to those who were present and therefore the rate is high. If the respondents were unclear about the meaning of a question, they could ask for clarification. Each respondent was *handed a questionnaire* and asked to complete it while in the room (Patton et al. 2003). Once the respondents submit their questionnaire, short face-to-face interviews were conducted with respondents who are available and willingly for discussion. Fifteen students agreed to be interviewed. During this session, respondents and interviewer were freely to ask and to response to any questions. This method gathered more fruitful information for the interviewer. Any response from the interviews was jotted down on a notebook for further reference and future used. Most of the time, the session with the respondents took around 20 – 30 minutes.

FINDINGS AND DISCUSSIONS

Respondents' Profiles

A total of 100 questionnaires were distributed to part-time students in Universiti Kebangsaan Malaysia. 86 students return back the questionnaire and were found to be useable for the data analysis. As expected all the 86 respondents who return back the questionnaire have WhatsApp messenger application installed on their phones and most of them used smart phones IPhone, Samsung or Blackberry. Some of the respondents have more than one phone and some of them have a dedicated phone just for social networking usages such as WhatsApp. Many respondents are above thirty years old (72%), and as expected most of them is either having a certificate or diploma qualifications. One interesting finding is that most respondents in this survey have a monthly household income of more than RM 5, 000, which indicates that the respondents in this survey can be considered are well-earning individuals. Another interesting finding is that WhatsApp messenger is much used by the single and divorcee person which can drive our assumption that single people may have more ample time to chat online. Table 1 displays the respondent characteristics.

TABLE 1. Respondents' characteristics (N = 86)

Age		Education	
20- 29	28%	SPM	18%
30-39	56%	STPM	12%
40-49	14%	Certificate Level	29%
Above 49	2%	Diploma	41%
Gender			
Male	51%		
Female	49%		
		Monthly household income	
		Less RM5K	39%
Ethnicity		RM5K-RM8K	40%
Chinese	12%	RM8001-RM10K	14%
Malay	77%	More than RM10K	7%
Indian and others	11%		
Marital Status			
Single	60%		
Married	30%		
Divorce	10%		

Usages of Whatsapp Messenger Time Usage

Most of the respondents (65%) check on their WhatsApp messenger for more than 10 times in a day and use this application the accumulation of more than 8 hours a day. Surprisingly, 21% of the respondents said that they access their WhatsApp group more than 100 times a day. Table 2 reports the number of hours respondents spent using WhatsApp per day.

TABLE 2. Time spent for WhatsApp (N = 86)

Time	Frequency	Percentage
1-2 hours	3	4
3-5 hours	15	17
6-7 hours	27	31
More than 8 hours	41	48

Some of the respondents use the application not only during their leisure time, but also during the lecture hours or working hours, which could divert their focus on their daily tasks. Most of the time, respondents have their phones with them and the tendency to access the application is quite high since there will always be a sound or notification on the mobile phone whenever there is an incoming message. Thus, the more time a student spends on WhatsApp, the less likely that they are focusedto the academic work and the less they participate in class, which may also lead to difficulties for them at the end of the day. These may distract their attention from the main lesson, and are not able to fully understand what is going on – i.e. he or she has less time to attend to academic matters such as class work, assignments, preparation for class test, mid-semester exams and end of the semester's examination. This may lead to the student's lower or poor grade points (Yeobah & Ewur 2014).

WhatsApp Messenger Group

Most respondents (70%) have more than fiveWhatsApp messenger groups that they belong to. Some of their messenger groups include their previous school mate, their university mate, office mate, personal mate, and relatives groups, and they have even each of their own subject group. This means that they may sometimes receive hundreds and even thousands messages per day depending how active their groups are. This sometimes

may leads to addiction when the respondent wants to read all the messages to get all up-to-date news. Some of the respondents state that they have up to 50 friends in one group because WhatsApp messenger application limit up to 50 friend lists in each group. Thus, for bigger group they have to split the friend lists into two groups, and some others opted up to sign up for "Telegram", another chat messenger which is similar to WhatsApps without any friend lists limitation. Table 3 displays the groups that the respondents join. Table 4 demonstrates purpose of WhatsApp messenger used by the respondents.

TABLE 3. Respondents' WhatsApp messenger group (N = 86)

WhatsApp groups	Percentage	WhatsApp groups	Percentage
Primary school mate group	68	Area where they live group	45
Secondary school mate group	85	House mate	60
Collegemate	58	Relatives group	80
Office mate	90	Subject mates	100
Personal mate	20	Others	75

TABLE 4. Purpose of using Whats App messenger (N = 86)

Purpose	Percentage	WhatsApp groups	Percentage
Academic work	15	Family	25
Gossiping	85	Politics	60
Chatting	90	Businesses	5
General Information	90		

Respondents were asked the reasons why they use WhatsApp on their mobile phones. More than 80% of the respondents claim that they use WhatsApp for socialising purposes such as disseminates information and gossiping, and only 15% said that they use it for academic work and not even 5% used it for business purposes. This indicates that most of the time these respondents have misused this application for chatting with friends on different issues rather than academic work on campus, which may also lead to the link between usage of the application and poor academic performance among the majority of the students, which is similar to Yeobah and Ewur (2014) findings. The more groups a student has on WhatsApp, the more friends he/she has, and the more time he/she spends on the application, according to most students interviewed (16 out of 20 students interviewed). A student who has a lot of friends on WhatsApp is most likely going to be responding to more people and thus spending more time accessing and chatting, which also may lead to distraction to focus in class or whatever he/she is doing. It is so interesting to know that some respondents (more than 50% of students interviewed) agreed that some information disseminates on WhatsApp need to be reconfirmed since the information is so easy and quick to share among friends and sometime this information is faked.

Respondents' PerceptiononWhatsApp

Many respondents (More than 85% respondents from the survey and confirmed by almost all the interviewed students) said that having a WhatsApp messenger application is good because the application is free of charge, very user friendly, easy to access, and can be blended with images and videos. The perception of usefulness and ease of use of technologies as advocated by Davis' TAM model (Davis 1989) seems to be relevant in this study. In deed some of the respondents claimed that WhatsApp is much better from other instant messaging such as WeChat and Telegram. Despite this claim, 60% of the respondents said the use of WhatsApp has more negative effect on their studies and only 40% percent said it has positive impact on their studies.

TABLE 5. Perception on WhatsApp (N = 86)

Perceived Usefulness	Percentage	Perceived Ease of Use	Percentage
Can be used anywhere	100%	Easy to access	87%
Flexible Time	93%	Easy to text	86%
Free of charge	87%	No need technical background	93%
Can be blended with images and videos	88%	Very user friendly	98%

From the positive point of views, respondents said there will always be somebody there in the group chats if they are bored or if there are some urgent or personal things to ask or share. This means they are not alone anymore because there will always be somebody on WhatsApp to share with. For religions point of view, the Muslim respondents (7 interviewed respondents) reveal that WhatsApp messenger has equipped them with daily "reminder (in Malay, it is called tazkirah)" from friends who cares about them.

On the other hand, those who said that WhatsApp affects them negatively (perceive risk) because they become unaware with the time they spend on WhatsApp. Respondents (8 interviewed respondents) said that they can be stuck on their phone for hours, chatting with friends through WhatsApp without realising the number of hours spent on the phone. Most of the time they tend to chat on others thing. Very little time is left for academic purposes since much of their precious time is wasted onchatting and unproductively on non-related academic related. This can lead them to be less equipped and inadequately prepared for quizzes and semester examination and therefore becomeless productive and effectiveas claimed by Yeobah and Ewur (2014). Some other negative effects include the spread of fake information and lies without control, confidential information that should not be published being shared, and also lack of face-to-face interaction.

In addition to the negative effects explained above, there are also some procrastination-related consequences with regard to the negative effect on students' performance. This is consistent with findings by Yeobah and Ewur (2014). Most students also feel lazy typing complete sentences and words and leave to the short hand form of typing. This style of writing destroys the students' spellings and grammatical construction of sentences. For example, words like 'you, and, forward, before, and others are being written

as 'u, n, 4wrd, b4 andetc. Phrases like 'on the way'is being written as 'otw" and 'thank you' as "tq". This has affected the way students write in English classes and in their examinations which result in destruction of grammar and the way they spell English words which is similar to Yeobah and Ewur's (2014) findings.

One interesting finding from the respondents (8 interviewed respondents) about WhatsApp messenger application is that the application itself does not allow filtering. For example, users who wanted to read a particular person's post in a group need to browse all the messages in that group. It ends up with the need to read all the messages throughout, which is wasting of time. Thus, for this reason sharing information on academic works may have caused some mess.

Conclusion and Recommendations

In summary, it is quite clear that WhatsApp has broughtsome good and badto part-time business students in UKM. However, this depends on the users themselves. If WhatsApp messenger application is put in its best uses, it can enhance the performance of the part-time students such as it makes communication easier and faster which would enhance effective flow of information and idea sharing among these students. However, if the application is used negatively it would has adverse impacts on the performance of students such as: it takes much of the students studies time, student become addicted to the application, results in stalling related problems, can destroys students grammar and spellings, leads to lack of concentration during lectures and difficulty in balancing online activities and academic preparation.

Similar to most research, this paper has limitations that point to further opportunities. The author focuseson 86 part-time business students in

only one university. Building on this research, there are opportunities for further work. The present research could serve as a starting point for more detailed studies. Additional studies on other tertiary institutions should provide further insights into the impact of WhatsApp on the performance of tertiary students in Malaysia. This research can be utilised to investigate the use of WhatsApp not only at university, but also at school, home, workplace, and various other settings, and for a variety of different audiences such as teenagers, young adults, the elderly, or families and should also focus on a bigger sample. For future research, it may be more helpful to examine how a student's psychological state influences motivations for the use of WhatsApp and also more rigorous methods should be employed to see if this application really have impact among students.

In general, this study finds some interesting result that could bring some contributions for the topics being discussed:

The study found that, instead of making communication easier and faster thereby enhancing effective flow of messages and idea sharing among students, WhatsApp has rather impacted negatively on the performance of students in tertiary institutions in Malaysia.

One interesting finding from the respondents about WhatsApp messenger application is the application itself. It allows text, images, music and video, but it does not allow filtering of one's post. Such feature is necessary so that users do not waste time to look through all messages.

Finally, it is important to highlight that there is very limited study on WhatsApp messenger application, particularly in Malaysia. Thus, this study provides some evidence and starting point of WhatsApp messenger application usages among part-time business students in Malaysia which brings in a new, possibly fresher, wider and more inclusive perspective on WhatsApp usages.

REFERENCES

Azjen, I. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* 50: 179-211.

Baškarada, S. 2014. Qualitative Case Study Guidelines. *The Qualitative Report* 19(40): 1-25.

Bouhnik, D. and Deshen, M. 2014. WhatsApp Goes to School: Mobile Instant Messaging between Teachers and Students. *Journal of Information Technology Education: Research*, 13: 217-231.

Boyd, D. M. and Ellison, N.B. 2007. Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication* 13(1): 210–230.

Boyd, D. 2007. Why youth (heart) social network sites: the role of networked publics in teenage social life. In: Buckingham D ed. MacArthur Foundation Series on Digital Learning: Youth, Identity, and Digital Media Volume. Cambridge, MA: MIT Press, Massachusetts, USA.

Church, K. and Oliveira, R.D. 2013. What's up with WhatsApp?: Comparing mobile instant messaging behaviours with traditional SMS, Mobile HCI '13. *Proceedings of the 15th international conference on Human-computer interaction with mobile devices and services*, 352-361.

Davis, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly* 13(3): 319-340.

Davis, C.H.F., Deil-Amen, R., Rios-Aguilar, C., Canche, M.S.G. 2014. Social Media, Higher Education, and Community Colleges: A Research Synthesis and Implications for the Study of Two-Year Institutions. *Community College Journal of Research and Practice* 00: 1–14.

Dowdall, C. 2009. Impressions, improvisations and compositions: reframing children's text production in social networks sites. *Literacy* 43(2): 91-99.

Gratton, C. and Jones, S. 2004. Research Methods for Sports Studies. London: Routledge.

Hashim, N. A. 2011. E-commerce and Government Policy Initiatives for Malaysian SMEs: *The Need for Assessent. Science and Public Policy* 38(10): 807–816.

Inforgraphics 2014. Retrieve on 20 October 2014 at http://socialmarketingwriting.com /tips-sharing-infographic-facebook-twitter -pinterest-linkedin/

International Telecommunication Union - ITU 2010. The rise of social networking – Changing the Web as we know it, Retrieve on 20 Oct 2014 at http://www.itu.int/net/itunews/ issues/2010/06/35.aspx

Kaplan, A. M., and Haenlein, M. 2010. Users of the world, unite! The challenges and opportunities of social media. *Business Horizons* 53(1): 59-68. doi:10.1016/j.bushor.2009.09.003

Keenan, A. and Shiri, A. 2009. Sociability and Social Interaction on Social Networking Websites. *Library Review* 58(6): 438-450.

Kirschner, P. A., and Karpinski, A. C. 2010. Facebook and academic performance. *Computers in Human Behavior* 26: 1237-1245.

Kuppuswamy, S., and Narayan, P. 2010. The Impact of Social Networking Websites on the Education of Youth, *International Journal of Virtual Communities and Social Networking (IJVCSN)* 2(1): 67-79.

Leedy, P. D. and Omrod , J. E. 2005. *Practical Research: Planning and Design* (8th ed.), New Jersey, USA: Prentice Hall Publisher.

Mazer, J. P., Murphy, R. E. and Simonds, C. J. 2007. I'll see you on "Facebook": The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education* 56: 1–17.

Moran, M., Seaman, J. and Tinti-Kane, H. 2011.

Teaching, Learning, and Sharing: How Today's Higher Education Faculty Use Social Media, Pearson Learning Solutions and Babson Survey Research Group. Upper Saddle River, New Jersey, USA: Pearson Learning Solutions.

Nicholson, S. 2011. Info graphics: The history of online social networking, http://socialmediatoday.com/socmedsean/286629/infographic-history-online-social-networking, April 17.

Office of Communication – Ofcom. 2008. A quantitative and qualitative research report into attitudes, behaviours and use, *Research Document*, Available at http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/report1.pdf

Olsen, P. 2014. WhatsApp Hits 600 Million Active Users, Founder says. Forbes, Available at http://www.forbes.com/sites/parmyolson/2014/08/25/WhatsApp-hits-600-million-active-users-founder-says/.

Ordanini, A. 2006. *Information Technology and Small Businesses - Antecedents and Consequences of Technology Adoption*. Cheltenham, United Kingdom: Edward Elgar Publisher.

Patton, E. and Appelbaum 2003. The Case for Case Studies in Management Research. *Management Research News* 26: 60-62.

Yeboah, J. and Ewur, G.D. 2014. The impact of WhatsApp messenger usage on students' performance in tertiary institutions in Ghana. *Journal of Education and Practice* 5(6): 157-164.

Rogers, E. M. 1995. *Diffusion of Innovations*. 4th edn., New York: Free Press.

Shambare, R. 2014. The Adoption of WhatsApp: Breaking the Vicious Cycle of Technological Poverty in South Africa. *Journal of Economics and Behavioral Studies* 6(7): 542-550.

Tornatzky, L. G. and Fleischer, M. 1990. *The Process of Technological Innovation,* Massachusetts: Lexington Books.

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